



99-12

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LIGHT EMITTING DIODES (LED) FOR EXIT SIGNS

SYNOPSIS:

The energy to power a single incandescent exit sign for one year may cost as much as \$30. This adds up to \$1 billion in annual energy costs for U.S. businesses and organizations, money that could be better spent elsewhere. LED exit signs reduce energy usage per sign to 5 watts or less. Besides saving 75 percent or more in energy costs, the light sources in energy-efficient exit signs typically have a longer life span than conventional incandescent exit signs, which means lower maintenance and replacement costs as well.

HIDDEN COSTS:

Exit signs cost more to operate than you may think. Traditional incandescent exit signs use significant amounts of energy and require frequent lamp replacement. Don't be fooled by lower first cost price tags for incandescent exit signs. Traditional exit signs have hidden costs that add up over time. If the exit sign is properly maintained the lamps will have to be replaced 5-6 times a year. These lamps plus the labor required

\$40-50 a year, in addition to the energy used. That single exit sign will cost your budget a total of \$70-80 per year. Multiply that by the 5000 signs on your base, and the figure becomes \$35,000-\$40,000/year. Now compare that to the LED. Virtually maintenance free (many claim 25 years before burnout) these signs have an energy cost of \$2-\$4 per year. The result is tremendous dollar savings, reduced maintenance and reduced landfill waste.

TECHNICAL CRITERIA:

Not all LED exit signs are created equal. Be sure that the LED meets the National Fire Protection Association's Life Safety code for letter size and spacing, have a luminance contrast greater than 0.8, and an average luminance greater than 15 candelas/meter² measured at normal (0°) and 45° viewing angles. Also, be sure to get a manufacturer's warranty of at least 5 years for defective parts. Following these minimum performance standards will help ensure the right LED is installed on your base.

EPA ENERGY STAR LED:

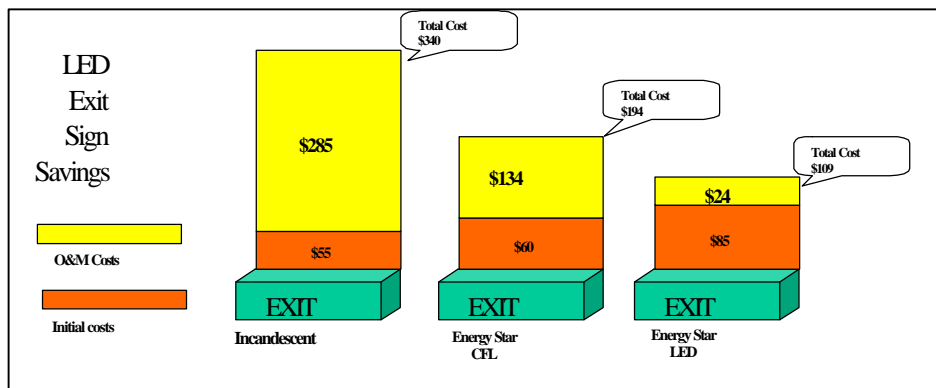
The majority of manufacturers in the exit sign industry now produce signs that are Energy Star rated by the EPA. This gives civil engineers a wide range to choose from when purchasing new signs. Products that have earned the Energy Star are listed on the EPA Website at www.epa.gov/doc/ARD-R5/cfc/estar.htm

ADDITIONAL INFORMATION:

E-Source has published a recent technical review on the performance of LEDs. The title is ER-98-7, "Improved LEDs Set for Exit Sign Market." This article is on the October 1998 CD-ROM delivered to each AF energy manager. See also A-Gram 96-50, LED Retrofit for Exit Signs.

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TARGET AUDIENCE: Engineering and Maintenance Flights